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INFORMATION REPORT

PREPARED AND DISSEMINATED BY
CENTRAL INTELLIGENCE AGENCY

COUNTRY
Hungary

SUBJECT
Early Warning Radar Stations/Soviet P-3, P-8 and P-20 Radar

DATE DISTRIBUTED

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SUPPLEMENT TO REPORT #

THIS IS UNEVALUATED INFORMATION

[This report is the result of a joint collection effort of the Air Force, the Army and CIA, and is disseminated in accordance with the provisions of NSCID #1.]

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1. The National Air Force and Air Defense Command known as the "OLLKP" [Orszagos Legiero es Legvedelmi Parancsnoksag] has two regiments. Regimental headquarters is located at Kecskemet and the other regiment is at Taszar. Both are responsible for the early warning and ground control intercept radar activities in Hungary. Each regiment has 20 detachments (or units) of company or platoon size. The company size detachment, composed of 100-120 enlisted men and officers, usually operates two radar sets, whereas the platoon size detachment, composed of 60 officers and enlisted men, operates only one radar set.

2. The commanding officer of the regiment at Kecskemet is Major Aron Racz who was sent to the USSR in 1954 to study Soviet techniques in early warning operations. He was a member of the Communist Party. The commanding officer of the "OLLKP" is Major General FNU Madarasz, who had his office at the Ministry of Defense Building in Budapest.

3. Twice a month, Soviet field grade officers, accompanied by Major Aron Racz, would visit every early warning radar installation in the country to inspect and make necessary recommendations. They were extremely thorough in their inspection and would sometimes stay a whole day if it were necessary.

4. The two regiments used mainly the Soviet P-3, P-8 and P-20 type radars. (Duna and Drava were not used). The main early warning and ground control intercept radar stations operated by these two regiments until 1 Oct 56 were located in the following places:

   a. Pape - one P-20 radar

   b. Zalaegerszeg - one P-8 radar

   c. Veszprem - one P-20 and one P-8 radar

   d. Szekesfehervar - one P-20 and one P-8 radar

   e. Kaposvar - one P-20 radar

   f. Taszar - one P-20 and one P-8 radar

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DISTRIBUTION	STATE	ARMY	NAVY	AIR

g. Budapest - one P-20 radar

h. Kalocsa - one P-20 and one P-8 radar

i. Janoshalma - one P-20 and one P-8 radar

j. Kecskemet - one P-20 and one P-8 radar

k. Hatvan - one P-8 and one P-3 radar

l. Miskolc - one P-20 and one P-8 radar

m. Mezocsat - one P-20 radar

n. Bekescsaba - one P-8 and one P-3 radar

o. Debrecen - one P-20 and one P-8 radar

In places where two radar were used, the equipment was usually placed at a distance of approximately one to 1½ kilometers apart.

5. During the November 1956 revolution, Soviet forces took over the radar installations and all of the personnel in these two regiments were dismissed and recalled to be assigned to other units. For example, two of my friends who worked with me were assigned to a border guard patrol unit.

6. The P-20 radar (Token) which is the early warning type, was first introduced in Hungary in 1952. However, during the summer of 1956, the Hungarian Government was anticipating the receipt of a new type of early warning radar from the USSR to replace the P-20's, whereupon the P-20's were to replace the P-3 types.

7. Some of the technical and operational characteristics of the P-3, P-8 and P-20 radar are as follows:

a. P-3 (Kniferest) Radar

Purpose: Early warning and ground control intercept.

Source of frequency: Two magnetrons.

Source of electric power: The regular city power or two diesel motors -- one in operation and one on stand-by.

Rate of antenna rotation: Six r p m.

Scopes: Two fluorescent scopes used one for height finding and one for distance.

(Maximum effective range: 150 kilometers.)

Personnel: Two operators.

25X1 Type antenna: 7 element horizontally polarized Yagi antennas (On file [redacted] is an antenna sketch for P-3 (Kniferest) Radar)

b. P-8 (Type B) Radar

Purpose: Early warning and ground control intercept.

Frequency source: Three magnetrons.

Electric power source: Regular city electric power or two gasoline motor driven generators furnishing 220 volts a c in three phases. When one is in operation, the other generator is on stand-by.

25X1 Type antenna: Two horizontally-polarized 10 element Yagi arrays. (On file [redacted] is Antenna sketch for P-8 (Type B) Radar)

Rate of antenna rotation: Six r p m.

Maximum effective range: 150-200 kilometers.

Accuracy in height finding: Above 600 meters. (This radar cannot detect aircraft flying below 600 meters.)

Personnel: Two radar operators.

Scopes: Two phosphorescent scopes 20cm in diameter each, used one for height finding and one for distance.

c. P-20 (Token) Radar

Purpose: Early warning and ground control intercept.

What? (Frequency source: Ten magnetrons.)

Maximum effective range: 600 kilometers.

Minimum effective range: 5-6 kilometers. (This radar is ineffective for aircraft at a distance closer than 5km.)

Electric power source: Regular city electric power or two diesel motor driven generators producing 510 volts a c in three phases. When one is in operation, the other generator is on stand-by.

Type antenna: V beam antenna system.

Rotation of unit: Six r p m.

Scopes: Two phosphorescent scopes each 40cm in diameter, used for height distance finding.

Personnel: Four operators.

8. The P-20 could not operate for more than six hours because of the great heat generated by the various components in the set. Normally this set would operate from four to five hours followed by a one hour break, which was just enough time to allow the equipment to cool off. This set would operate accurately during the first two hours; but the scope reading would become inaccurate when the set would start to become overheated. During the fourth and fifth hours of operation, the readings obtained would be as high as 50 per cent inaccurate. The officers in charge realized this situation and would always tell us to do our best, and that they were only interested to see the set in operation. I remember a few cases where radar operators were jailed: they were accused of reading the scopes incorrectly because of the inaccuracy of the equipment. Radar operators rotated every 10 minutes because of the heat hardship.

Bull S—T !!

9. Equipment failure occurred once or twice a day with the result that daily maintenance of equipment was necessary. Almost 75 per cent of the components and parts in this set were replaced during six months of operation. One of the main problems was due to the motor rotating mechanism of the entire unit. This was a synchronized motor built by the Soviets. In addition, the power generators would also cause us a lot of trouble. For example, when the regular city electric power was used, the scope reading for the first two hours was accurate. However, when we switched to our own power generator, operation appeared quite different. The antennas, for instance, would rotate four to 4½ r p m instead of six r p m, thus making the scope reading inaccurate.

10. Repair and maintenance was done by specialized officers. In case of serious trouble, Soviet advisors would help. The tracking of more than 30 planes with the P-20 was almost impossible. The scope screens would light up and cause much confusion. This equipment could be completely dismantled and ready to move within six hours time, whereas it would only take two to three hours for the P-3's and P-8's.

11. The P-3 radar and the P-8 radar could only operate for two hours. The scope reading of these two sets, like the P-20, would become inaccurate because of the overheating of equipment.

12. The price paid by the Hungarian Government for a P-8 radar was estimated at about two million forints, and one to one and one-half million forints for a P-3. These prices included the radar set as well as the associated equipment. My knowledge of these prices is based on a talk given to us by our commanding officer who mentioned the cost of the equipment and asked us to take good care of it.

13. Each P-3, P-8 and P-20 radar had an IFF antenna called the "LRB" which was usually located at about 50 or more meters from the radar installation. This antenna would rotate like the radar antenna and pick up special type coded signals transmitted by the Soviet or satellite aircraft for identification purposes. This code was changed every 24 hours. When a foreign aircraft was picked up by any radar, it would immediately be reported to the Ministry of Defense by telephone. The ministry would then contact the regimental headquarters and issue the necessary orders.

25X1 (On file [redacted] are the following, all classified CONFIDENTIAL:

1. Sketch of a P-3 radar antenna.
2. Sketch of a P-8 radar antenna.)

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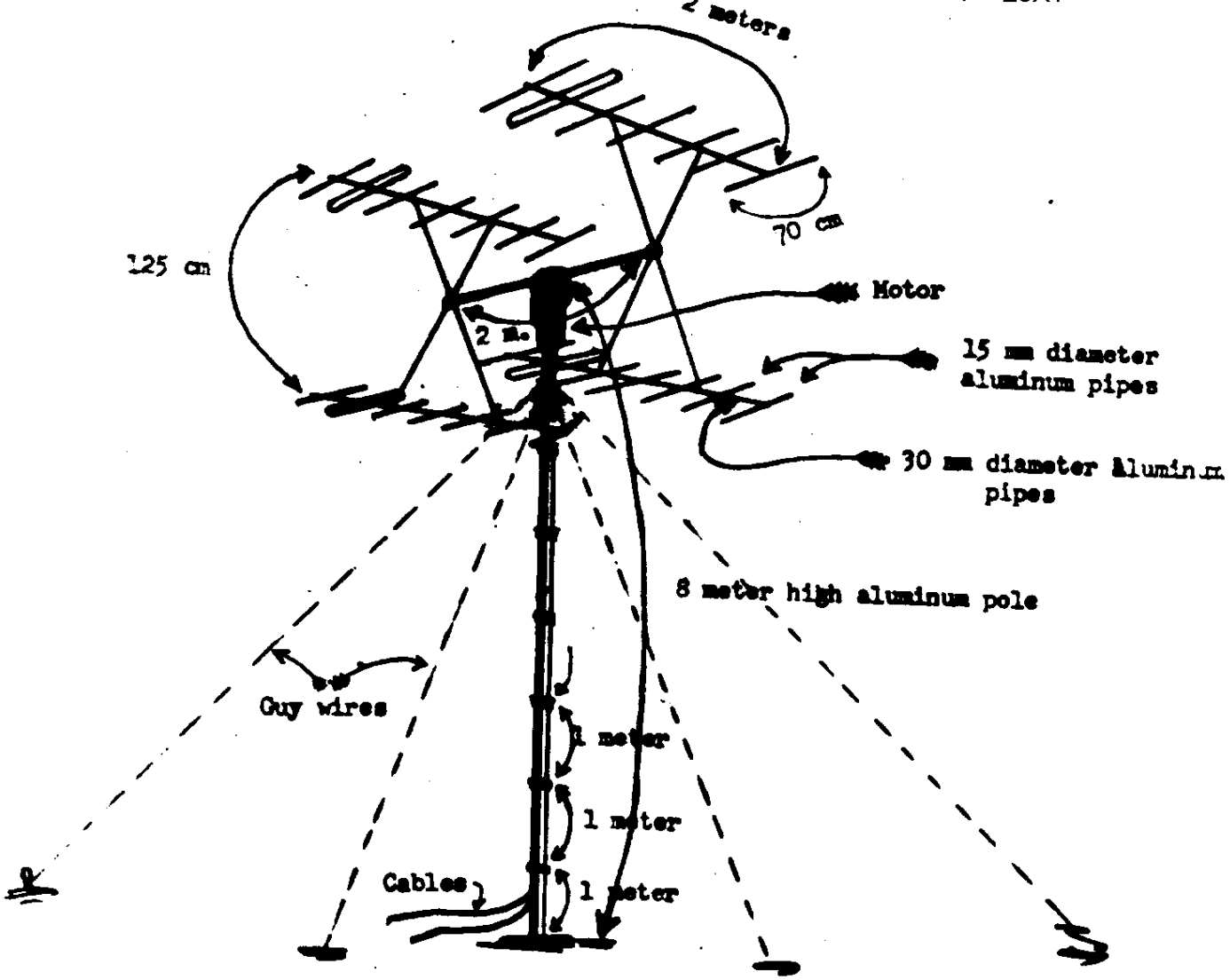

Antenna Sketch for P-3 (Kniforest) Radar

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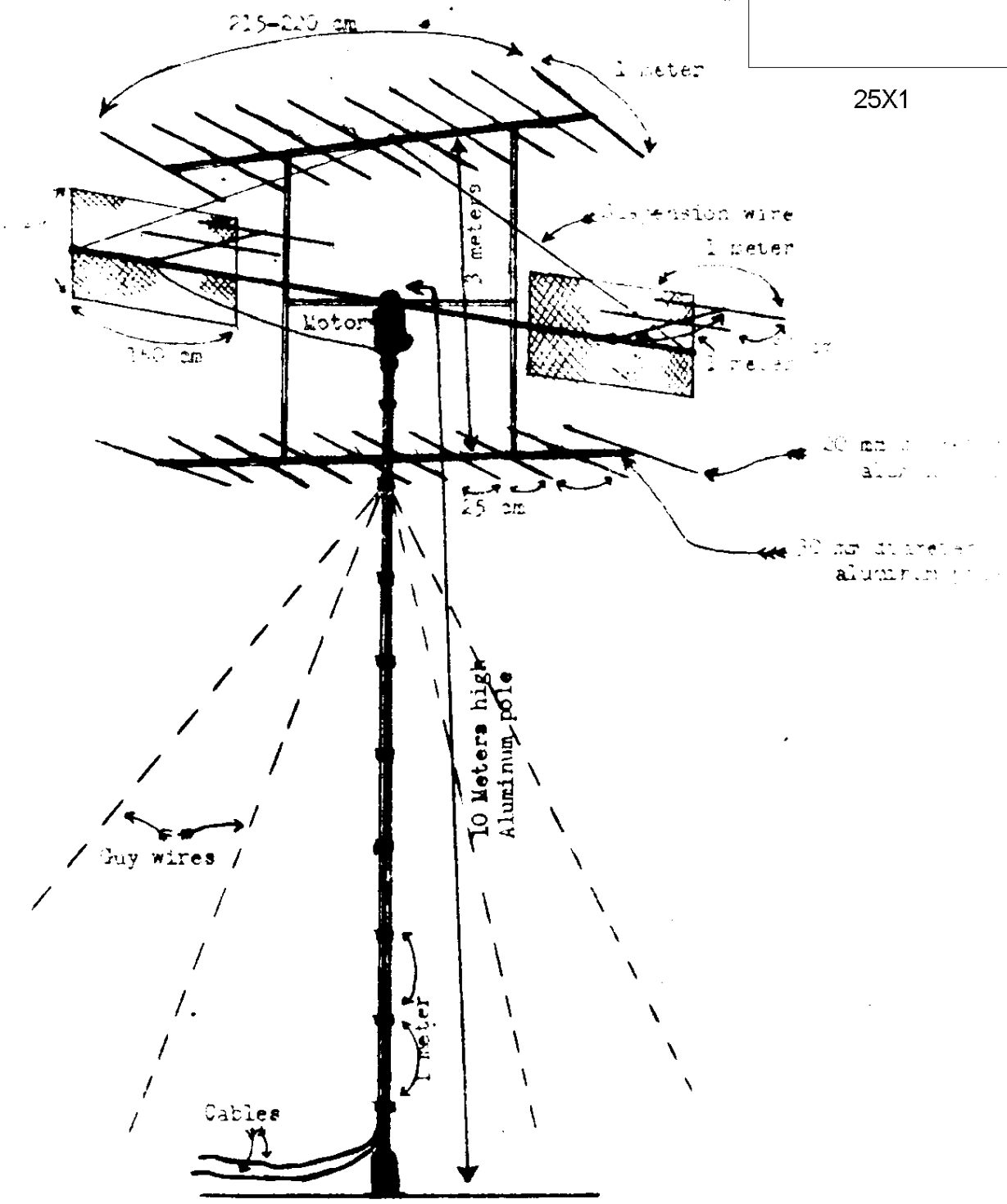

Antenna Sketch for P-8 (Type-B) Radar

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